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Healthy soils, a fresh start.

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Lately, there has been a lot of discussion on soil terminology, perhaps because policymakers have recognized the need to use soil as an ally tackling future climate demands, but mostly because this recognition will likely be translated from the EU Soil Strategy into a new soil health law for the EU. Such an initiative for soil is tightly connected to the EU Biodiversity Strategy for 2030, the Climate Adaptation Strategy, the UN 15.3 Goal for Land Degradation Neutrality, and other environmentally-related policy initiatives (Figure 1) stemming from the European Green Deal and from the UN Sustainable Development Goals.



Figure 1. Links between EU Soil Strategy and other EU initiatives. Source: European Commission,

2021.

At the end of 2021 the European Commission launched the EU soil strategy for 2030, giving the first step towards a consolidated understanding of what a healthy soil means, “(...) *when they are in good chemical, biological and physical condition, and thus able to continuously provide as many of the following ecosystem services as possible (...)*”. This definition is therefore expected to be translated into a collection and combination of various soil parameters and associated dynamic thresholds (in time and space). Allowing thus the determination of the spatial extent of healthy - and unhealthy - soils, being likely used to assess the EU progress towards the objectives set.

On top of the importance of such initiatives for our future, this is also a great opportunity for researchers and policymakers to understand i) where we stand in terms of major soil threats, ii) what the major current knowledge gaps for EU soils are, iii) and which are the areas at higher risk for land degradation that then require further restoration actions. The problem seems complex from a diversified European perspective, due to the policy landscape, [the lack of] harmonized data availability, as well as local and regional differences. Nevertheless, the EU needs to start building on the current environmental acquis.

The aim of this work is to present the current status of the EU soils making extensive use of the latest LUCAS soil monitoring campaigns and to identify and discuss with the scientific community the identification of key-thresholds for identified parameters, which will likely determine future land and soil management actions towards a healthy soil.